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NOTE ON DEVONIAN LIMESTONES BETWEEN THE BLUFF AND BIRD ROCK, WARATAH BAY, VICTORIA

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[Read 10 December 1953]

Along the west coast of Waratah Bay between the Bluff and Bird Rock there are almost continuous exposures of limestones which Lindner included in his Bell Point Formation (Lindner 1952). It is possible to distinguish three different limestone members which are all distinct lithologically and palaeontologically and differ from the limestones in the type area of the Bell Point Limestone, near Bell Point and Mushroom Rock.

At the Bluff, now almost entirely removed by quarrying, and for about 100 yards south of it the coastal cliff is formed by hard, thick-bedded, dark limestones which are rich in *Amphipora* and contain in addition specimens of *Favosites* and rugose corals. These rocks strike 30° and dip 45° W. They may be known as the Bluff Member of the Bell Point Limestone and their exposed thickness is about 260 feet. The *Amphipora* biostromes of the Bluff Member are surprisingly similar in appearance to those of the *Amphipora* Limestone of the Desert Basin of Western Australia (Teichert 1949).

The limestone is badly shattered and traversed by innumerable calcite veins. To the north and to the south the outcrops of the Bluff Member are cut off by high-angle thrust faults. Fossils, except *Amphipora*, are difficult to extract from the shattered rock, but one sample (W.B.2) was obtained from the limestone fragments in the crushed rock along the fault forming the southern boundary of the Member. This thrust fault strikes about 17° and dips 50° W and is marked by the development of about 40 feet of black clay, resulting from the crushing of the limestone.

Further south along the coast follow light-grey limestones which are free from *Amphipora* and generally poor in fossils, although they contain some bands of corals and stromatoporoids. These rocks I propose to call the Kiln Member of the Bell Point Formation, because they are well exposed and fossiliferous near the old lime kilns at the former settlement of Waratah. The belt along which the Kiln Member outcrops is divided into three fault blocks by two steep reversed faults, each of which is accompanied by a conspicuous belt of black clayey rock, similar to the one mentioned above. The greatest thickness of the Kiln Member is found in the northernmost of these blocks where the beds dip 65° W and the maximum thickness exposed is 360 feet.

South of the old lime kilns there follows a sandy beach without rock outcrops until the coast swings eastward where it is formed of well-bedded grey limestones and dolomites. These are generally unfossiliferous, but contain lenses of fossiliferous brown limestone. These limestones are lithologically quite distinct from the limestones further north and may be called the Bird Rock Member of the Bell Point Formation, because they continue eastward into the platform on which

Bird Rock stands as an erosion remnant. The thickness of this member has not been determined.

Corals have been collected from all three limestone members as indicated on the map (Fig. 1). Their relative ages cannot be determined from the field evidence, because they are separated from each other by reversed faults.

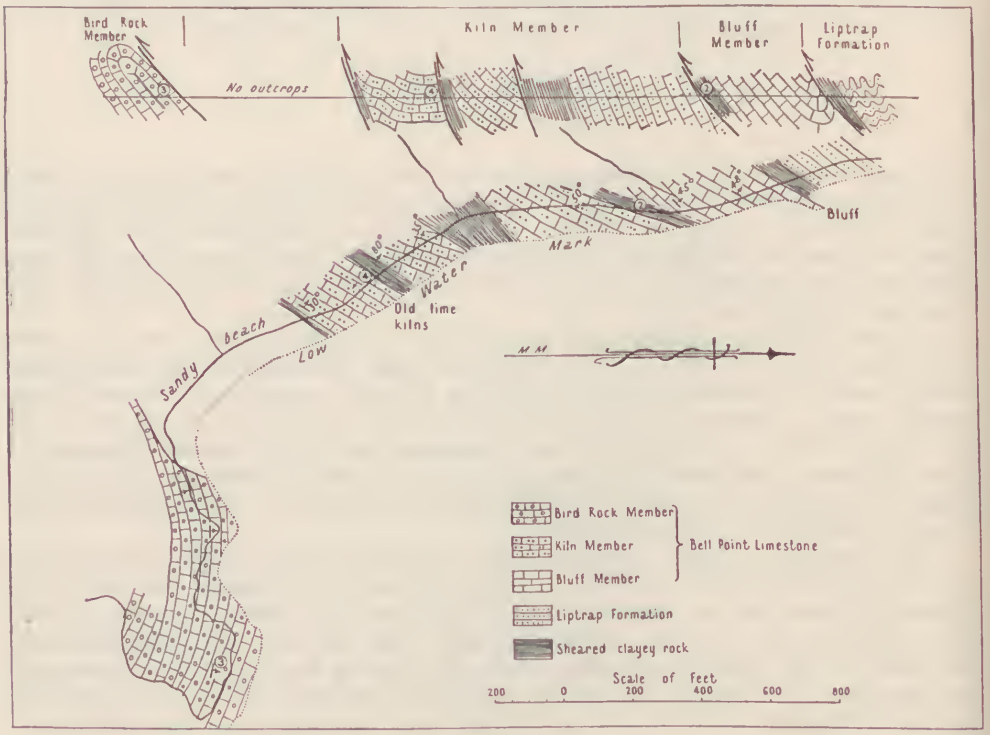

FIG. 1

All three limestone members recognized along the coast between the Bluff and Bird Rock are quite different lithologically from the rocks of the type area of the Bell Point Limestone near Bell Point and Mushroom Rock (see map in Lindner, 1952). The sequence here is much more fossiliferous. In addition to corals there are abundant stromatoporoids, brachiopods, pelecypods, gastropods and ostracodes. These limestones deserve to be distinguished as a separate Member, but more detailed stratigraphical work must be done before this unit can be defined more accurately.

References

LINDNER, A. W., 1952. The Geology of the Coastline of Waratah Bay between Walkerville and Cape Liptrap. *Proc. Roy. Soc. Vic.*, 64: 77.

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